

**AMENDMENTS TO THE SPECIFICATION**

Please insert the following section heading and paragraph at page 1, after the title at line 5:

**-- CROSS-REFERENCE TO RELATED APPLICATIONS**

This application is a continuation of International Patent Application Number PCT/EP02/07311 filed July 2, 2002, entitled "Method For Transesterification Of Fats And/Or Oils By Means Of Alcoholysis" and designating, *inter alia*, the United States, which claims priority to German Patent Application Serial No. 101 32 842.7, filed July 6, 2001. --

Please insert the following section headings at page 1, after the title and before line 1:

**-- BACKGROUND OF THE INVENTION**

**Field of the Invention** --

Please replace the paragraph on page 1 beginning at line 6 with the following replacement paragraph:

-- The present invention relates to a process of obtaining fatty acid esters from triacylglycerides by means of alcoholysis. ~~In particular, the invention relates to a process for the transesterification of fat and/or oil by alcoholysis wherein, in order to accelerate the process, in the initial stage at least one alkanol fatty acid ester is added in a quantity such that the reaction mixture produced thereby consists of one phase.~~ --

Please insert the following section heading at page 1 before line 13:

**-- Description of the Related Art** --

Please replace the paragraph beginning on page 1 at line 13 with the following replacement paragraph:

Transesterification reactions are well known ~~per se~~. They are a commercially important class of industrial organic reactions. In a transesterification reaction, an ester is converted into a different ester by exchange of the acid groups or by exchange of the alcoholic groups. If this transesterification is carried out by exchange of the alcoholic groups, it is termed alcoholysis (also alkanolysis). In alcoholysis, the alcohol or the alkanol is added in excess in order to obtain a high yield of the desired

ester. Recently the production of alkyl esters, in particular of methyl esters, from vegetable oils (for example, rapeseed oil, soybean oil) has become extremely ~~topical~~ popular in connection with the production of diesel fuel from renewable raw materials.

Please replace the paragraph on page 2, beginning at line 11, with the following replacement paragraph:

-- ~~The transesterification~~ Transesterification of the triacylglycerides by means of alcoholysis is ~~characterised in that the~~ a reaction between alkanol and triacylglycerides which requires an induction stage, during which there is ~~only~~ a low reaction rate, because the alkanol reaction component is not soluble in the oil. This situation is very troublesome, especially during the production of methyl esters, because methanol is only slightly soluble in the oils and fats which are to be transesterified. However, methanol is readily soluble in the methyl esters of the fatty acids. Owing to the low concentration of methanol in the oil, the transesterification reaction ~~only~~ always proceeds slowly. The reaction mixture has to be mixed vigorously until ultimately the ester content has increased to such an extent that the reaction mixture consists of one phase, ~~and the~~ at which time the reaction rate ~~suddenly~~ rises considerably. --

Please replace the paragraph beginning on page 2, at line 23 with the following replacement paragraph:

-- In practice, alkali metals, or alcoholates of the alkali metals, are used as catalysts. The alkaline catalysts dissolve in the reaction mixture, i.e., the reaction is catalysed homogeneously. During the reaction, the alkali metals and their alcoholates are converted to soaps, which dissolve particularly in the glycerol formed and increase the cost of its further processing in order to obtain pure glycerol. However, the methyl ester also retains small quantities of alkali, which may not be completely without problems ~~where~~ when methyl esters are used as diesel fuel. Because of this, heterogeneously catalysed processes have also been proposed recently; for example, using a metal salt of a strongly basic amino acid as a solid catalyst which is insoluble in the reaction mixture (Patent Application DE 199 50 593 A1). Furthermore, a

catalyst based on titanium oxides has been developed, the disadvantage of which is that the reaction temperatures are in the region of 240°C. --

Please insert the following section heading at page 2 before line 35:

-- **SUMMARY OF THE INVENTION** --

Please replace the paragraphs beginning on page 2 at line 36 with the following replacement paragraphs:

-- The present invention relates to a process for the transesterification of fat and/or oil by alcoholysis wherein, in order to accelerate the process in the initial stage, at least one alkanol fatty acid ester is added in a quantity such that the action mixture produced thereby consists of one phase. --

-- ~~Proceeding from this prior art, the~~ The object of the present invention is to eliminate or to shorten this the induction stage of transesterification of fat and/or oil by alcoholysis, while maintaining moderate reaction temperatures, and thereby to render rendering the process more effective. --

Please replace the paragraph beginning on page 3 beginning at line 1 with the following replacement paragraph:

-- This object is achieved by a process for the transesterification of fat and/or oil by means of alcoholysis, wherein, ~~in order to carry out the alcoholysis,~~ an alkanol, in particular a monohydric alkanol, is added in excess to the fat and/or oil to be transesterified, ~~characterised in that.~~ In particular, at least one alkanol fatty acid ester is added to the fat and/or oil in a quantity such that the reaction mixture produced thereby consists of one phase under the reaction conditions. --

Please replace the paragraph on page 3, beginning at line 9 with the following replacement paragraph:

-- Surprisingly, it has now been found that ~~merely~~ only a quite small quantity of added alkanol fatty acid esters ~~can~~ are needed to achieve this ~~object~~ objective. The addition of the alkanol fatty acid esters may take place before, after, or at the same time as the addition of the alkanol. In the process of the present invention, therefore, the initial stage of the transesterification is avoided or shortened. --

Please insert the following section heading at page 3, before line 13:

-- **DETAILED DESCRIPTION OF THE INVENTION** --

Please replace the paragraph beginning on page 3 at line 14 with the following replacement paragraph:

-- ~~In the process according to this invention, the initial stage in the transesterification is avoided or shortened, for example, in the case of alcoholysis.~~ In one embodiment of the present invention, alcoholysis is carried out by using methanol, by and adding a portion of the continuously produced methyl esters to the triacylglyceride starting product in quantities such that the mixture of oil, methanol and methyl esters consists of one reaction phase. If the reaction mixture takes place in one reaction phase, the active alkanol concentration is high from the very beginning and the reaction proceeds correspondingly rapidly. For example, at 135°C, in the initial stage of a process heterogeneously catalysed by zinc arginate (production of methyl esters from palm oil), a reaction rate of 0.8 g/skgZnarg was recorded and, after a single phase had formed, a reaction rate of 2.5 g/skgZnarg was recorded.

Please replace the paragraph beginning on page 3, at line 38, with the following replacement paragraph:

-- The alkanol fatty acid esters are added preferably in a quantity of 5 to 50 wt.%, particularly and more preferably 12 to 20 wt.%, based on the fat and/or oil.

Please replace the paragraph beginning on page 5, at line 7 with the following replacement paragraph:

-- ~~Below, the~~ The process according to of the present invention is explained in more detail by several examples the following three working examples, which are contrasted to the one comparative example from the prior art.

Please insert the following heading on page 5, at line 9:

-- Working Example 1 --

Please insert the following heading on page 5, at line 17:

-- Working Example 2--

Please insert the following heading on page 5, at line 23:

--..Working Example 3..--

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Please insert the following heading on page 5, at line 29:

-- Comparative Example 1.—